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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,295	03/12/2004	Thomas P. Yang	Y035 0001	6454

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EXAMINER

WU, IVES J

ART UNIT PAPER NUMBER

1713

DATE MAILED: 01/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/798,295	Applicant(s) YANG, THOMAS P.	
	Examiner Ives Wu	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/12/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- (1). **Claims 1-7, 10-11 and 13-18** are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson et al (US005096975A).
- (2). Anderson et al disclose a coating composition containing at least a copolymer of a vinylbenzene sulfonic acid and an ethylenically unsaturated monomer (Abstract, line 1-4). The water soluble conductive addition polymers having functionally attached hydroxyl groups, any suitable ammonium or alkali metal salt, for examples, sodium styrene sulfonate, vinyl toluene sulfonic acid etc (Col. 2, line 50-66). When the binder polymer is to be employed in the preparation of the conductive polymers, any suitable hydroxyl containing solution or latex polymer may be employed such as for example, polyvinyl alcohol. It is further preferred that the binder polymer be employed in an amount of from about 20 to about 50 wt% of the coating composition to achieve abrasion resistance and permanency of antistatic properties (Col. 3, line 30-34, 41-45). Illustrated in the Example 5, the surfactants used to be calculated as 0.8% (Col. 5, line 11-12).

As to the film in **the independent claim 1**, it is well known that coating on substrate forming a film.

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As to the free-radical polymerization method in the **dependent claim 6**, Anderson et al disclose the 0.1 gm of sodium persulfate in the Example 1, which is free radical generator for free-radical polymerization (Col. 4, line 56-68). As further evidenced by Duan et al (US005807919A): Col. 5, line 52-65.

As to the limitation of **dependent claim 11**, the use of styrene sulfonic acid monomer taught by Anderson will form a sulfonated polystyrene polymer as further evidenced by Dehm et al (US004618655), Col 4, line 58-62.

As to limitation of **dependent claim 15**, Anderson et al disclose surfactant maybe added to facilitate solution or dispersion or as a coating aids. Suitable surfactants include sodium lauryl sulfonate, dicotyl sodium sulfosuccinate, and the like (Col. 3, line 66 – Col. 4, line 2). Wetting agent as claimed is one of the surface active agent (page 1111-1112, Hawley's Condensed Chemical Dictionary, 11th Ed).

As to the container made from film in the **dependent claim 16**, the disclosure of Anderson et al meets the requirements of the present claim 16 in terms of the types of materials. It is reasonable to presume that the water soluble film of Anderson et al would make a container as presently claimed in light of its chemical similarities. The burden is shifted to applicants to establish that the container of the present claims is not the same as or obvious as that set forth by Anderson et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(3). **Claims 8, 9 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al (US005096975A) in view of Misumi et al (US003833457) and Beaulieu (US003677979).

As to the condensation polymerization to form the sulfonate polymer in the **dependent claim 8**, phenol sulfonic acid monomer in the **dependent claim 9**, Anderson et al **do not teach** the sulfonate polymer formed by condensation polymerization of formaldehyde with sulfonate monomers such as phenol sulfonic acid.

However, Misumi et al **teach** the typical polymers for coatings by condensation polymerization of monomers having sulfonic acid groups such as phenol sulfonic acid (either free sulfonic acid or salts thereof) (Col. 3, line 9-11, Col. 5, line 15-20). Beaulieu **teaches** the condensate of formaldehyde with at least one phenol sulfonic acid for a thermosettable water-soluble resin as well (Abstract, Col. 2, line 10-32).

The advantages of using the condensate of formaldehyde and phenol sulfonic acid is its excellent tensile strength characteristics, in addition, the sulfonated phenolic resin systems display excellent storage stability characteristics when in aqueous solution form (Beaulieu US003677979: Col. 1, line 68- Col. 2, line 7).

Therefore, it would have been obvious at time the invention was made to include the sulfonate polymer formed by condensation polymerization of formaldehyde with sulfonated monomers such as phenol sulfonic acid taught by Beaulieu in order to obtain the aforementioned advantages. Alternatively, Misumi et al disclose that the coating polymer may also be prepared by incorporating sulfonic acid groups to the basic polymer which is obtained by addition polymerization of condensation polymerization. In view of their interchangeability due to recognizable functional equivalent sulfonate monomers for coating, it would also have been obvious to the person of ordinary skill in the art to expect such a combination of sulfonate polymers formed by either condensation or free radical polymerization to work in an additive or cumulative manner. *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

As to the limitation of **dependent claim 12**, Misumi et al disclose the molecular weight of three sulfonated polystyrenes to be 600, 10,000 and 50,000 separately used in the Example 4 (Col. 10, line 20-24).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(1). **Claims 1-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kochvar et al (US20020161088A1) in view of Misumi et al (US003833457) and Anderson et al (US005096975A), Joseph et al (US003677979).

(2). Kochvar et al (US20020161088A1) disclose a rapidly dissolvable polymer films. (Title). The film-forming composition for use in preparing water-soluble films that are rapidly dissolving under cold water conditions, the composition comprising a water soluble polymer material such as polyvinyl alcohol and a principle solvent (Abstract, line 1-5). In addition, blends of different types of polymer materials can also be formulated and prepared to produce the films. For instance, ratio of 80/20, 60/40 and 50/50 with polyvinyl alcohol can be used to advantage ([0030]).

(3). As to the blend with sulfonate polymer in **the independent claim 1**, Kochvar et al **do not teach** the blend with a sulfonate polymer.

However, Anderson et al **teach** a polymer which is a copolymer of a vinylbenzene sulfonic acid and an ethylenically unsaturated monomer containing at least one primary hydroxyl group (Abstract, line 3-6). A binder polymer such as polyvinyl alcohol is employed in preparation of patentee's polymers (Col.3, line 30-34). Misumi et al also **teach** the use of sulfonate polymers for the coating composition (Col. 4, line 32 – Col. 5, line 32).

The advantages of using sulfonate polymer is to improve overall properties of the product not temporary but durable such as excellent water absorption, anti-electrostatic (Misumi et al - US003833457, Abstract, line 9-14; Anderson et al – US005096975A, Col. 1, line 42-68).

Therefore, it would have been obvious at time the invention was made to blend the water soluble film-forming polyvinyl alcohol polymer of Kochvar et al with sulfonate polymer of Anderson et al or Misumi et al in order to obtain the aforementioned advantages. Also, the sulfonate polymer such as polystyrene sulfonic acid is well known as a film forming (used in the art of membrane), water soluble polymer evidenced by Joseph et al (US004196001- Col. 3, line 50-53, line 61-62), therefore, the sulfonate polymer is compatible with polyvinyl alcohol in terms of the properties of water soluble, film-forming, motivated by a reasonable expectation of success. **In re O'Farrell, 853 F.2d 894, 903, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988).**

As to the sulfonate polymer containing a sulfo group in the form of $-\text{SO}_3\text{M}$, M to be hydrogen, sodium, potassium or ammonium in the **dependent claims 2, 7 and 10**, Anderson et al disclose that any suitable ammonium or alkali metal salt of a vinyl benzene sulfonic acid may be used such as for example, sodium styrene sulfonate, vinyl toluene sulfonic acid etc (Col. 2, line 50-66).

As to the limitations of **dependent claims 3-5**, Kochvar et al disclose the blend ratios being 80/20, 60/40 or 50/50 ([0030]).

As to the limitation of **dependent claim 6**, Misumi et al teach monomers by addition polymerization such as styrene sulfonic acid or salt (Col. 3, line 10; Col. 4, line 48-53). As a polymerization method, either thermal polymerization, radical polymerization, or ionic polymerization (Col. 5, line 9-11).

As to the limitations of **dependent claims 8 and 9**, Misumi et al disclose monomers by condensation polymerization such as phenol sulfonic acid and coupling agents are aldehyde such as formaldehyde (Col. 5, line 15-26).

As to the limitation of **dependent claim 11**, the use of styrene sulfonic acid monomer taught by Anderson et al and Misumi et al will form a sulfonated polystyrene polymer as further evidenced by Dehm et al (US004618655), Col 4, line 58-62.

As to the limitation of **dependent claim 12**, Misumi et al disclose the molecular weight of three sulfonated polystyrenes to be 600, 10,000 and 50,000 separately used in the Example 4 (Col. 10, line 20-24).

As to limitations of **dependent claims 13-15**, Anderson et al disclose the surfactants used in Example 5 calculated to be 0.8% (Col. 5, line 11-12).

As to the container made from film in the **dependent claim 16**, the disclosure of the combined teaching of Kochvar et al and Misumi et al, Anderson et al meets the requirements of the present claim 16 both in terms of the types of materials and their contents. It is reasonable to presume that the water soluble film of combined teaching of Kochvar et al and Misumi et al, Anderson et al would make a container as presently claimed in light of its chemical similarities.

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The burden is shifted to applicants to establish that the container of the present claims is not the same as or obvious as that set forth by the combined teaching of Kochvar et al and Misumi et al, Anderson et al.

(4). As to the limitations of **independent claim 17**, the disclosure of Kochvar et al and Misumi et al, Anderson et al is incorporated herein by reference. The most subject matters of composition comprising polyvinyl alcohol and sulfonate polymer in the applicant's claim 17 has been recited in the applicant's claim 1, and has been discussed in paragraph (2) and (3).

As to the limitation of **dependent claim 18**, Anderson et al disclose that any suitable ammonium or alkali metal salt of a vinyl benzene sulfonic acid may be used such as for example, sodium styrene sulfonate, vinyl toluene sulfonic acid etc (Col. 2, line 50-66).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: Ives Wu

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Date: December 30, 2005


DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700